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Disease Notes

Natural Occurrence of *Phytophthora infestans* Causing Late Blight on Woody Nightshade (*Solanum dulcamara*) in New York

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Woody nightshade (*Solanum dulcamara*) is a common hedgerow herbaceous perennial in the United States, one of only three native *Solanum* spp. *S. dulcamara* is a known host of *Phytophthora infestans* (3), but infection is rarely reported. There is a U.S. record from Maryland (2); in 1947, Peterson (4) stated that this species had never been found blighted in its natural habitat, although in 1960 it was listed as a host of *P. infestans* in New York (1). The A2 mating type has not been reported on this host. On 2 July, 2009, leaf lesions similar to those of *P. infestans* on potato were found on wild *S. dulcamara* at Riverhead, NY. The plant was growing in a home garden within 10 m of potato and tomato plants infected with *P. infestans*. When two infected leaves of *S. dulcamara* were incubated for 24 h under high humidity, a pathogen growth developed around the lesion margins that was characterized by hyaline mycelium bearing lemon-shaped sporangia that released motile zoospores after chilling in water, which is consistent with *P. infestans*. The caducous and limoniform to ovoid sporangia were 39 to 50 µm (average 45 µm) × 26 to 28 µm (average 27 µm) with a length/breadth ratio of 1.66. No oospores were observed. Three isolates were obtained from this plant during July 2009. Growth on rye agar was indistinguishable from that of local tomato isolates of *P. infestans*. Detached leaflets of *S. dulcamara* and *S. tuberosum*, inoculated with the woody nightshade isolates and kept in a humid chamber, became infected and developed profuse sporulation within 5 days. The pathogen isolated was confirmed as *P. infestans* by morphological, biochemical, and molecular characteristics. Inoculations of attached leaves of potted *S. dulcamara* plants resulted in necrotic lesions with many sporangia; sporulation also developed on inoculated, attached, and detached tomato leaves. *P. infestans* was reisolated and identity confirmed as before. The three isolates were A2 mating type, metalaxyl-resistant, mitochondrial haplotype Ia.

All were glucose-6-phosphate isomerase *100/122* and peptidase *100/100*, as confirmed with single-spore isolates. RG57 fingerprint analysis confirmed that isolates from woody nightshade, tomato, and potato obtained from the same and nearby sites were identical. Although *P. infestans* in the United States belongs to the new population, which may infect a wider host range than the old US-1 clonal lineage, *S. dulcamara* infections have only been found when late blight is already widespread in neighboring fields and there is no evidence to suggest that woody nightshade acts as an overwintering host in the United States.

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